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Published in:
Interactivity, Game Creation, Design, Learning, and Innovation

DOI (link to publication from Publisher):
10.1007/978-3-319-76908-0_43

Publication date:
2018

Document Version
Accepted author manuscript, peer reviewed version

BioSpil: Bringing Interactivity and Gaming into a Cinema-Context

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Abstract. This paper presents a study on a current phenomenon conceptualized as BioSpil, which brings interactivity and gaming into a cinema context. The study focused on two questions, namely in what way BioSpil can be called a game, and how it functions as a social game. The study applied an ethnographic approach. The analysis showed that BioSpil had a game-like character, but were, to a certain extent, in conflict with two of Calliois' categories that can define a game, namely being free and separate in time and space. The aspect of a game as being free, is not only dependent on accessibility in terms of devices, but also on cultural and contextual factors. This influenced the conditions of what constitute accepted and expected behaviors of visitors in a cinema-context. Furthermore, the analysis identified that BioSpil offered three kinds of social spaces; an active, a passive, and an external space.

Keywords: BioSpil, Interactivity, Games, Commercials, Mobile phones, Cinema, Game design theory, Explorative study, Thematic analysis

1 Introduction

In this study, we have explored the concept of *BioSpil* from *Dansk Reklame Film* A/S (Danish Advertising Film) [1] '*Bio*' referring to the Danish word '*Biograf*', which means 'cinema' and '*Spil*', the Danish word for 'game'. BioSpil is a platform where different kinds of games are available for movie-goers to log on and play approximately five minutes before the regular commercials in Nordic Film Cinemas in Denmark[1]. The games are commercials presented in a game format with game-design elements and game principles [2]. The basic idea behind BioSpil is to bring interactivity and gaming into a cinema-context. However, this does not only comprise potential entertainment values for the movie audience, but also offer advertisers opportunities to interact with the audience in a new way. By allowing the BioSpil participants to continue some of

[1] The project BioSpil is developed in collaboration between MEC Access and MediaCom Beyond Advertising. The concept and the technological platform is developed by the TechAdd company AddThunder.

adfa, p. 1, 2011.

the games at home on Facebook, the developers have an intention to build a bridge between the offline BioSpil in cinemas and online on Facebook. An example of this is the DolceWord game[2] from Danish Advertising Film, which can be continued after the cinema-visit and, thereby, increase the possibilities for the participants to win prizes at Nescafé Dolce Gusto's Facebook-page[3] (Egmont, 2013) (Fig. 1).

Fig. 1. Left image shows the interface of the DolceWord BioSpil. A coffee word appears on the canvas, and the user should as fast as possible swipe the word on their mobile phone on a 4x4 words letter plate. The winner participates in a weekly competition about a Nescafé (NDG) coffee machine. At NDG's Facebook site it was possible to enter the competition also after the cinema visit and continue to play against other people. The image to the right shows the DolceWord game and how it is exposed on the movie screen (http://groupmdanmark.dk/cases/mediacom-udviklingen-af-biospil/)

Phillips and Noble [3] identified attributes that formed movie-goers attitudes toward advertisements in cinemas. The respondents found their movie experience diminished due to the advertising, as well as to the sense that they, at the same time, had to pay more and more to go to the movies. Also, the respondents indicated that due to the commercials, they choose to arrive late to the cinema to miss out the commercials.

Statistical analyses from Danes' Cultural Habits [4] show that young people more often visit the cinema compared to older people. 24% of young people between 15 and 19 years of age and 26% of people between 16-29 years of age have visited the cinemas in 2012. Generally, more females than men visit the cinema. Recent statistics from Danish Cinemas[4] indicates a positive development when it comes to an increase of cinema visitors, which is explained by the digitalization of Danish cinemas as well as the 3D technology. Furthermore, it is expected that cinemas will earn more money on advertisements compared to what was the case in 2014[5].

The Entertainment Software Association (ESA) [5] presents in their report from 2016 that 27% of people below 18 years of age are game players and 29% of people

[2] For more details, see link: https://www.youtube.com/watch?v=c70r6EgwT50
[3] See link: https://www.facebook.com/NESCAFEDolceGustoDanmark/
[4] Danske Biografer, 2014. Brancheforening for Landets Biografer: http://danske-biografer.dk/danskerne-ser-stadig-film-i-biografen/
[5] This prediction comes from Global Entertainment & Media Outlook, PwC: https://www.pwc.com/gx/en/industries/entertainment-media.html

between 18-35 years of age play games. The gender division shows that 59% of males and 41% of females represent the game players. Furthermore, the statistics from ESA informs that 48% of the game players play social games, where 36% use their smartphone as a game device and 31% a wireless device. The most frequent type of games that the most frequent gamers play on their wireless of mobile devices is puzzle, board game, card game or game shows.

Whereas related research indicates that movie-goers are not so positive to cinema advertisements, the Global Entertainment and Media Outlook predict an up-going trend regarding both cinema visitors and advertisements. Considering the above-presented statistics, which show that both in the case of being a movie-goer and a game-player, young people are the most frequent representatives, this could indicate that *BioSpil* as a form for combining game play with advertisement could be of interest for the most frequent movie-goers. Based on this and the fact that BioSpil as a phenomenon has not been widely examined, we have conducted an explorative study investigating (1) in what way BioSpil can be called a game, and (2) how it functions as a social game.

2 Background

While cinema advertising is not a new phenomenon, the first advertising film appeared in 1897 for Admiral cigarettes [6], presenting it in an interactive game-format is novel. To date and to our knowledge, advertising as gameplay has not been a field of scientific study. The only reference to this phenomenon that we have found is a Russian paper from 2016: 'Linguistic Characteristics of Modern Danish Advertisements', which contains an analysis of Danish advertising texts from different kinds of media (print editions, television, radio, the Internet) created between 2005 and 2016. The analysis was linguistic and focused the language of advertising in terms of grammar, syntax and other qualities of sentences. In this study, BioSpil is referred to as an object of advertising where it is possible to win prizes in a movie-context [7].

Sega Games started a new advertising trend when they in the 1980s inserted Marlboro billboards in its racing games [8, 9]. This refers to in-game advertising, where products or brands are included within a digital game, for example, different brands are placed in games in the form of billboards and posters [10, 11]. Similar to advertisements in movies, slots are offered by game producers to advertisers to include their product in a game [11]. Another way to advertise, is by means of so called advergames and constitute a form of gamification of advertising [10]. Advergames are similar to BioSpil, as they are designed to advertise a specific brand or product. The games are downloadable or playable on the advertiser's website and are supposed to convey an entertaining message for the advertised product or brand [10]. Advergames are most often casual games that offer short time playing and can be played on smartphones or tablets [12].

3 Methodology

The study is grounded in an ethnographic approach, where the empirical work has been explorative and carried out in the field and characterized by the people we have met

during the field studies [12]. Based on that the topic we investigated previously has not been so widely explored, we have worked inductively in the sense that the gathered data guided as well as directed us through an interchangeable field of study. The data was collected on the basis of negotiations and discussions between the members of the research team, where each data set led to the next data set aiming towards a form of theory-building [11].

The study was carried out in Aarhus, the second biggest city in Denmark and consisted of observations in cafes and in a cinema (sections 3.1 and 3.2), an expert interview, and an additional questionnaire survey (section 3.3). A more detailed description of each of these studies is presented in the below text.

3.1 Observing in Cafes

In order to better understand visitors' interaction with BioSpil in a cinema context, we conducted an initial study in two different cafe-contexts with the overall intention to explore human's interaction with mobile phones – the device with which BioSpil is played. In particular, our interest was to explore what happens when people use mobile phones in public spaces. In this regard, we were interested in the mobile phone as a tool for users to accomplish their goals, rather than specifically as an entertainment system.

Cafes constitute gathering areas for different kinds of people to meet socially or to individually have a break and something to drink and eat. Often, also, cafes offer opportunities for people to charge their mobile devices. We conducted two observations in cafe-contexts; one in a regular cafe and one in a board game cafe. In both cases, the observations were unstructured, as we would not be limited in relation to new discoveries as the observations progressed. In order to get an authentic and accurate data collection, where our presence would not affect the observed behavior and appearance of the cafe visitors, we chose to take on a nomadic observer role and apply a covert/disguised observation technique [13]. The benefit of this approach was to try to achieve a more nuanced understanding toward a field that still is under-researched, in particular regarding theories related to cinema advertisement in the form of games. Covert observations are in some instances criticized as they do not include any informed consent, which can violate the informants position [14]. However, Lugosi [15], in his ethnographic study of commercial hospitality, states that covert observations sometimes is necessary, but that this concealment needs to be negotiated throughout the fieldwork. This is in line with Calvey [13], who also argues that in such covert research, engagement with the ethics of research should not become a ritualistic tick box process, but should run throughout the lifetime of a project. Based on this, we considered that the data collection, which took place in public domains, would not violate the informants' privacy or identity. Ethically, we have based this on the Research Ethics Framework by ESRC [16].

Accordingly, we have applied a form of situated and reflective ethics [13], where we were aware of that observations in public spaces are influenced by people acting differently depending on their social context. People, their environment and their social context are factors that always mutually influence each other and, thereby, it is not possible to directly replicate this study as the results can only be valid for those specific people and contexts [17].

The observation in the regular cafe included seventy-five guests (forty-eight females and twenty-seven males) with a varied but not noted age range. Here, we were interested in how the informants used the mobile phone in the cafe space and in what way the interaction with the mobile phone unfolded potential social interaction. As the mobile phone can be used anywhere and everywhere, private and public lives of the user merge [18].

The board game cafe observations included twenty-seven board gamers (seventeen females and ten males) all of them approximately in their twenties. This age-group is in line with the above-mentioned statistics regarding the ages of most frequent gameplayers as well as movie-goers (see section 1). Similarly, as in the observation in the regular cafe, our interest was directed towards how the cafe visitors used the mobile phone in the cafe space, in particular in what way it functioned in a gaming context.

3.2 Observing in a Cinema

In the cinema observation study, we applied a similar method approach as in the cafe contexts, namely unstructured observation (see section 3.1 for further description). The overall intention was to explore how movie-goers interact when playing BioSpil (BioSpil is further elaborated in Section 1). Furthermore, through the informants' BioSpil gameplay, our interest was to investigate whether and in what way BioSpil represented a game. Different from the cafe observations, we considered the mobile phone as an entertainment system with social potentials. The observation included 14 BioSpil and was carried out at the Nordic Film Cinema in a city located in southwest of Denmark. Sixty-two moviegoers equally distributed between females and males were included in the study, and had a varied but not noted range of age.

We applied similar nomadic observer role as in the cafes and we applied a covert/disguised observation technique [13] (for further description, see section 3.1). We chose to place ourselves at the back of the cinema to have an overview of the whole space and to not fall outside the norm of being a moviegoer, in order to (1) record authentic data on the moviegoers' actions and interactions with BioSpil, individually and interpersonally, and (2) leave the cinema when BioSpil was over, so we did not disturb the daily operations or the moviegoers' experience, or at least as little as possible.

3.3 Expert Interviews and Questionnaire Surveys

Due to that the concept of BioSpil is not so widely researched, we targeted additional data from experts to broaden the understanding of the concept as such and how the games, from their perspectives, function when played in the cinemas. Therefore, we conducted four semi-structured interviews [19] with experts: one with the developer of BioSpil, two with employees from the operating staff in a Nordic Film Cinema, which has a daily contact with the users of BioSpil and the system running BioSpil, and, finally, one interview with the owner of a board games cafe in Aalborg.

To qualify the collected data, we used triangulation including different sources of data and different respondents [20]. In this regard, we added questionnaire surveys to a selection of BioSpil users. Twenty-five users replied and they were mostly men in their late twenties. Users of the board games cafe in Aalborg supplied eleven answers (on

Facebook), where nine were men and two were women, all of them also in their late twenties. The questions in the questionnaires were primarily aimed at people's experiences of playing BioSpil.

3.4 Thematic analysis

We followed a thematic analysis to identify, analyze and describe patterns in the collected data. These patterns were, then, gathered into themes. This method can be seen as a minimization and organization of data, opening up for interpretation of the data [21]. Usually codes are used in the early stages of thematic analysis, to ground the themes strongly in the data. For our analysis, we instead chose to apply a detailed focus using flexible themes formed from Patton's idea of sensitizing concepts [22]. Grounded in the study's explorative and inductive approach, guiding theories emerged alongside the analysis. In line with this, the formulated research questions regarding in what way BioSpil can be classified as a game and how it functions as a social game, were systematically narrowed down along the way. The emerging themes were found iteratively, first as a tool in initiating assumptions and continuously developed, as data was gathered, assembled and analyzed into fewer and overarching themes.

We consider the collection of data as small bits of reality, through which we investigated events, meanings and experiences, such as the effects of discourses that operate in social contexts [21].

4 Analysis

BioSpil represents a concept where a certain commercial is presented in a game format with game-design elements and game principles. The BioSpil games can be played in a cinema before the movie starts. The gameplay can also continue afterwards by being available on the product's website or Facebook-site. In this way, the BioSpil concept brings interactivity and gaming into a cinema-context, which opens up for potential entertainment values for the audience as well as opportunities for advertisers to interact with the audience in new ways.

In order to find out in what way BioSpil can be called a game, and how it functions as a social game, we performed a thematic analysis. We have reviewed observations and interviews to identify these themes and ended up with a collection of eleven initial themes presented in Table 1.

Table 1. Initial themes.

Informants	**Method**	**Initial themes**
Users of BioSpil in the Nordic Film Cinema	Unstructured observations	1. How the informants interact with the device 2. How the informants interact with each other
Developer of BioSpil	Semi-structured interview	3. The social aspect of BioSpil

		4. The BioSpil development process 5. The meaning of the device
Operating staff in the Nordic Film Cinema	Semi-structured interview	6. The cinema vs. BioSpil 7. BioSpil: commercial or game? 8. The operation of BioSpil
Owner of the board game cafe	Semi-structured interview	9. The interaction between the informants 10. The role of the phone 11. The visitors

After having identified initial themes, we made a comparative analysis of them, where we reduced the eleven themes to two [21].

The two themes were:

- Devices and accessibility
- The game as a social space

To process these themes, we applied a framework from Roger Calliois' theory [23] on games and play to understand BioSpil as a game in relation to the theme 'Devices and availability'. For the other theme 'The game as a social space', we used Richard Rouse's theory [2] on game design, which helped us to understand what motivated the informants to use BioSpil.

4.1 Devices and accessibility

The analysis showed that the devices (e.g. smartphone, iOS or Android operating systems, the BioSpil and Facebook apps) and the accessibility to the BioSpil were crucial ingredients for their participation in the gameplay. Calliois' theory [23] defines a game by introducing six elements, namely: free, separate, uncertain, unproductive, governed by rules and make belief. In addition, he also includes four types of experiences in relation to game-players and games and these are: competition, chance, vertigo and simulation. Since this study is not about game-play experiences, we only look closer into the six game defining elements, which are:

- Games are *free* when players can participate spontaneously and leave them when they want to.
- Games are *separate* when they are limited in time and space. If games are interrupted, the continuation is defined by players.
- Games are *uncertain* when there is no predefined outcome. Players initiatives define the outcome of the game.
- Games are *unproductive* when no goods are produced and when they end as they begin.

- Games are *governed by rules* when they suspend ordinary laws and behaviours that must be followed by players.
- Games involve *make-believe* that confirm for players the existence of imagined realities that may be set against "real life" [23].

Through observations of the BioSpil players in the cinema, we found that two of the above-mentioned elements was more outstanding than the others, namely *Free* and *Separate*. They are further described in the below sections (4.1.1 and 4.1.2)

4.1.1 Free

The participants in the study experienced the BioSpil game as accessible in terms of being free to play. The necessary devices (e.g. smartphone, iOS or Android operating systems, the BioSpil and Facebook apps), however, limited the accessibility. If a game should be considered as free to play, it must not be a forced participation. Simultaneously every player must have the opportunity to participate spontaneously and to withdraw from the game [23]. In this sense, BioSpil is free as it is accessible in the cinema context and afterwards on social media. The participants in the study could choose both to participate and to leave the game at any moment when it was playable. They retrieved the BioSpil app in the dedicated timeslot before the regular commercials and the movie started. The participants were guided through visual and verbal instructions how they should download the app and get going with the game. This resulted in that the participants experienced the introduction to the BioSpil and to join and start playing the games as an easy and accessible way, also for beginners. Spontaneous participation in the game is therefore also possible and likewise is the option of spontaneous withdrawing from the game since no repercussions exists from closing the app or to stop interacting with the phone. However, there is a limitation of the accessibility and spontaneous participation in the gameplay since the participants needed to possess all the necessary devices to interact with the BioSpil app and the games.

4.1.2 Separate

The second of Calliois' elements that BioSpil had a notable conflict with, was whether or not BioSpil as a game was separated in a spacious sense. According to Calliois [23], a game must have an established place and time for where and when it can be played. The games in this study, therefore, constituted a closed and protected universe, which Calliois describes as a pure space.

The physical spatial element of BioSpil is defined by three factors: (1) the cinema room; (2) the cinema screen; and (3) the phone. These physical elements of BioSpil can be related to Calliois' definition of a game's spacious separation. Since the games have a start and end, it is possible for the players to enter or leaves these spatial spaces (the cinema space, the cinema screen and the phone). However, the results from this study showed that BioSpil also has experience-based spatial elements regarding visibility and audibility. The technical segment behind the game (hardware and software) creates an apparent conflict in relation to these experience-based spatial elements. During the

gameplay in the cinema that was observed, the games crashed or a technical error occurred. In these situations, the participants lost the ability and opportunity to correct the game and continue playing. Thereby, they lost the interaction as such as they could not resume the game. In other words, the participants in the study lost the defined space of the game and the motivation to continue playing.

In the following section, we have applied Rouse's theory [2] of game design to the BioSpil concept, including a closer look at the aspects that motivated the participants in the study to play BioSpil.

4.2 The game as a social space

The analysis showed that the BioSpil participants experienced the aspects of socializing and bragging rights as the main components to why they participated in the BioSpil gameplay. Rouse (2015) describes that players in particular request four types of game-experiences, either isolated or mixed up [2]:

- *Challenge*: Players are motivated by facing challenges and succeeding in overcoming them.
- *Socialize*: Players will engage themselves and are motivated by games set in a social context.
- *Bragging rights*: Players also engages in winning the game to gain respect from their peers and the rights to brag about it.
- *Fantasize*: Players are motivated to play games so they can be released in another world, a fantasy world, and explore it.

The below sub-sections describe the two types of game-experiences that the participants in this study put forward, namely socializing and bragging rights.

4.2.1 Socializing

The analysis of interviews and observations showed that the participants primarily found the game to be a social game. The importance of this aspect was further confirmed by the BioSpil's developer, who stated that BioSpil focuses on social aspects of gameplay experiences as these essentially are motivating the participation in BioSpil. The gameplay activity in the cinema, along with the games' subsequent invitation to share the participants experience on Facebook, was put forward as building stones that helped to create a social dimension of the game. In addition, some games, such as horse races, helped the participants to create a sense of "being in a team" as they in this game worked together to get their horses to win the race. This social aspect of the gameplay experience is in line with Rouse [2], who emphasizes that a lot of games provide a social context and most people enjoy the socializing aspect of these games. Despite the fact that single-player games exist and thrives, there are more multiplayer games and social games because people want game experiences that are social [2].

4.2.2 Bragging rights

The participants in the study experienced that BioSpil encouraged them to share their results from the gameplay activity in the cinema on Facebook. The “bragging rockets” feature in the games and the sharing of the experiences on Facebook created an opportunity for the participants’ "bragging rights". These bragging rights are also established after the end of a game, where the winning participant got their names on the cinema screen. Beside the social aspect of the BioSpil gameplay, the participants also engaged in the gameplay to win. Having a high score or beating an opponent in a game gave the opportunity to brag and support the participant’s self-esteem. Rouse [2] states that the emotions that a game can bring to the player, are stronger than what is experienced in other kinds of media, where the experiences are less profound and the personal involvement is less extensive [2].
The discussion section will further elaborate on the game and gameplay aspects of accessibility, socializing and bragging rights.

5 Discussion

The discussion is centered around whether game design theory supports BioSpil as a game and in what way this is compliant to the outcomes from the thematic analysis of the empirical study. The findings from the observations in the board game cafe, the expert interviews and the supplementing questionnaire data, are part of the discussion. Following this section, the paper concludes with a question about BioSpil having a future potential of being a disruptive innovation.

5.1 Accessibility and contextual factors

Calliois [23] defines games based on certain categories, e.g. they have to be free, governed by rules, and separate in time and space. In this study, the category of being free was emphasized as it should be accessible. The results showed that BioSpil was not fully accessible as it is dependent on the users having a number of devices. The devices contribute to defining the gameplay environment, the desired behavior and culture of the users. The differences in the contextual culture are clearly visible in the difference between board games in cafes and BioSpil in cinemas. At the board game cafes, the phones are undesirable. Considering the preferred behavior in board game cafes, the same mirroring of desired behavior and culture as in the cinema was observed, where the phone is not a welcomed device [24]. BioSpil's location, i.e. before the advertisements and the start of the movie, now serves as an exceptional break as it challenges the cinema behavior and culture [24]. In this sense, the cinema culture and users’ behavior limit BioSpil's accessibility. If the cinema as an institution prevents users against using their phones, the users are, as well, prevented to join BioSpil games.

5.2 The game as a social space and its mediators

External mediators, which for BioSpil is the game itself, are significant for a gameplay activity. The mediators contribute to defining the space in relation to a game. For example, in BioSpil, as well as at the board games cafes, non-players also were included in socializing, and as such they became mediators maintaining players' interest in the game activity. They did so by, for example, giving advices to the player regarding a next step in the game, or notifying the player when he succeeded in the game. In this way, the mediators had a more important role, and to a greater extent, than initially assumed.

From the investigations into the social space of BioSpil and at the board game cafe, three dimensions of interactions were identified, which describe emerging social spaces applicable within this study:

- An *active space*, which concerns those who play and shoots bragging rockets or talk about the game. In addition, this space also includes the mediators, who actively support specific players.
- A *passive space*, which concerns those who are watching the gameplay and cheers, sit at other tables or stand as observers.
- An *external space*, which concerns the interactions that reaches out from the executive space. For example, sharing results via Facebook or chatting on forums with people from the cafe.

6 Concluding remarks

This paper presents the current phenomenon of BioSpil, which brings interactivity and gaming into a cinema context. In particular, the study focused on two questions, namely in what way BioSpil can be called a game, and how it functions as a social game. The study applied an ethnographic approach, including observations, expert interviews, and an additional questionnaire. Further studies are needed to confirm the outcomes of this study.

According to Calliois' categories [23] of what can define a game, BioSpil had a game-like character, but were, in particular and to a certain extent, in conflict with two of Calliois' categories, namely being free and separate in time and space. The aspect of a game as being free, is not only dependent on accessibility in terms of devices, but also on cultural and contextual factors. This, in turn, influences the conditions of what constitute accepted and expected behaviors of visitors (potential players) in a cinema-context. In line with Rouse [2], BioSpil constituted three kinds of social spaces; an active, a passive, and an external space.

The analyses of the empirical data indicate that BioSpil in its current form embraces an innovation with a future opportunity to become disruptive [25]. According to Christensen [25], disruptive innovations starts in the form of simple applications related to a limited market and moves up market to displace established competitors. BioSpil as a concept and the technology behind it, can be applied to several other social contexts, where it can impact the way consumers use this kind of technology. BioSpil offers consumers something they did not have before in terms of social and digital gaming-based

experiences in the cinema, which can be extended to other contexts. In addition, the concept creates a new market for the advertising industry, by offering a new platform where large proportions of consumers do not necessarily consider the platform as advertisement, but rather as entertainment. At the same time, it can be concluded that the practical and technical application still is a hurdle that retains the concept. Consequently, for now BioSpil can only be regarded as a sustaining innovation on its way to open the door towards disruptive innovation [25].

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